

REMARKS

This is a full and timely response to the non-final Office Action mailed October 3, 2008, in which Applicants' Claims 1-22 were rejected. By way of this Response, Applicants' Claims 1-9, 13-19, and 21 have been amended; Applicants' Claims 10-12, 20, and 22-28 have been cancelled; and Applicants' Claims 29-31 have been added. Reconsideration of pending Claims 1-9, 13-18, and 21, and consideration of newly-added Claims 29-31, is respectfully requested in view of the following remarks.

I. Telephone Conversation with Examiner occurring on December 23, 2008

Applicants wish to thank Examiner Sung and his supervisor for participating in a telephone conversation on December 23, 2008, regarding Applicants' pending claims and the applied references. At the conclusion of this telephone conversation, it was agreed that, if Applicants' independent Claim 1 were amended to recite the feature of a plurality of radial openings in the first ablative composite sub-assembly, and if the directionality of the radial openings was recited in sufficient detail, Applicants' amended independent Claim 1 would likely overcome the rejection set-forth in the outstanding Office Action dated October 3, 2008. Examiner Sung also indicated that prosecution could potentially be advanced if Applicants' claims were each amended to recite "an ablative rocket nozzle" instead of "an ablative composite assembly" in their respective preambles.

II. Elections/Restrictions

On page 2, the Office Action states that Applicants' Claims 23-28 have been withdrawn as being drawn to a non-elected method of manufacture.

Applicants' Claims 23-28 have been cancelled without prejudice or disclaimer of the subject matter contained therein.

III. Claim Objections

On page 2, the Office Action objects to Applicants' Claims 16-21 due to inconsistencies between the preamble of independent Claim 16 and the preambles of dependent Claim 17-21.

The preamble of Applicants' independent Claim 16 has been amended to recite that Claim 16 is directed to "[a]n ablative rocket nozzle." The preambles of Applicants'

Claims 17-19 and 21, which each depend from Applicants' independent Claim 16, have likewise been amended to recite "[a]n ablative rocket nozzle." It is believed that these amendments render the preambles of Applicants' Claims 16-19 and 21 sufficiently consistent to overcome the objections set-forth on page 2 of the Office Action.

Applicants' Claim 20 has been cancelled without prejudice or disclaimer of the subject matter contained therein.

IV. Claim Rejections under 35 U.S.C. § 112, Second Paragraph

On page 3, the Office Action rejects Applicants' Claims 10-12 and 22. The Office Action states that the term "unsupported" appearing in Claims 10 and 22 is indefinite; that the trademark Plastilock® appearing in Claim 11 is indefinite; and that the trademark Scotch-Weld™ appearing in Claims 11 and 12 is indefinite.

Applicants' Claims 10-12 and 22 have each been canceled without prejudice or disclaimer of the subject matter contained therein.

V. Claim Rejections under 35 U.S.C. §§ 102 and 103

On page 4, the Office Action rejects Applicants' Claims 1-6 and 15-17 under 35 U.S.C. § 102(b) as anticipated by U.S. Pat. No. 3,418,707 ("the Emerson reference"). On page 7, the Office Action rejects Applicants' Claims 6-14 under 35 U.S.C. § 103(a) as unpatentable over the Emerson reference in view of U.S. Pat. No. 4,539,244 ("the Beggs reference"). Similarly, on page 8, the Office Action rejects Applicants' Claims 18-21 under 35 U.S.C. § 103(a) as unpatentable over the Emerson reference in view of U.S. Pat. No. 3,595,025 ("the Stockel reference"). Lastly, on page 9, the Office Action rejects Applicants' Claim 22 under 35 U.S.C. § 103(a) as unpatentable over the Emerson reference taken in view of the Stockel and Beggs references.

Applicants address each of these rejected claims, in turn, below.

A. Applicants' Amended Independent Claim 1

Applicants' independent Claim 1 has been amended to further distinguish over the references of record. As amended, Applicants' Claim 1 is directed to an ablative rocket nozzle including: (i) a first ablative composite sub-assembly and a second ablative composite sub-assembly; (ii) a plurality of radial openings formed through an outer wall of the first ablative composite sub-assembly; (iii) a first plurality of axial openings in the first ablative composite sub-assembly; (iv) a second plurality of axial openings in the second ablative composite sub-assembly and generally aligning with the first plurality of axial openings; and (v) a film adhesive disposed between the first ablative composite sub-assembly and the second ablative composite sub-assembly, which joins the two sub-assemblies together when cured. Applicants' amended Claim 1 also specifies that each radial opening in the plurality of radial openings extends in radial direction substantially perpendicular to the longitudinal axis of the ablative rocket nozzle. Lastly, Applicants' Claim 1 further recites that the film adhesive includes a third plurality of openings therethrough that generally aligns with the first plurality of axial openings in the first ablative composite sub-assembly.

An example of a first ablative composite sub-assembly including a plurality of radial openings and a first plurality of axial openings is shown in Applicants' FIGs. 1, 3, and 4 and described in the attendant description (note radial openings 44 and axial openings 16 in sub-assembly 10). An example of a second ablative composite sub-assembly including a second plurality of axial openings is shown in Applicants' FIG. 2 and described in the attendant description (note axial openings 16 in sub-assembly 22). An example of a film adhesive including a plurality of openings therein that aligns with the first plurality of axial openings in the first ablative sub-assembly is shown in Applicants' FIG. 3 and described in the attendant description (note the openings formed through film adhesive 32 that align with the axial openings in sub-assembly 10).

As indicated above, Applicants' amended independent Claim 1 recites *inter alia* the feature of a plurality of radial openings formed through an outer wall of the first ablative composite sub-assembly. Claim 1 also specifies that each radial opening in the plurality of radial openings extends in radial direction substantially perpendicular to the

longitudinal axis of the ablative rocket nozzle. In view of the above-referenced conversation occurring on December 23, 2008, it is believed that the recitation of this subject matter is sufficient to render Applicants' Claim 1 patentably distinct over the references applied against Claim 1 in the outstanding Office Action dated October 3, 2008.

During the telephone conversation occurring on December 23, 2008, Examiner Sung also pointed to U.S. Pat. No. 6,951,317 ("the Woessner reference") as potentially teaching the feature of a plurality of radial openings in an ablative rocket nozzle (see, for example, radial nozzles 106 in Woessner FIGs. 9-11). This reference was cited, but not applied, by the outstanding Office Action. Therefore, to further distinguish over the Woessner reference in addition to the Emerson, Beggs, and Stockel references, Applicants have further amended Claim 1 to recite that the film adhesive includes a third plurality of openings therethrough that generally aligns with the first plurality of axial openings in the first ablative sub-assembly and the second plurality of axial openings in the second ablative sub-assembly. The Woessner reference does not teach an ablative rocket nozzle including a film adhesive having a plurality of openings therethrough that generally align with axial openings provided in first and second ablative sub-assemblies. Nor do any of the other cited references teach such a feature. Therefore, the cited references do not teach or suggest every structural element recited in Applicants' amended independent Claim 1 as required to establish a *prima facie* case of anticipation under 35 U.S.C. § 102 or a *prima facie* case of obviousness under 35 U.S.C. § 103. Accordingly, Applicants respectfully submit that Applicants' amended independent Claim 1 is allowable.

B. Applicants' Dependent Claims 2-15

Applicants' Claims 2-9 and 13-15 are each believed allowable at least in view of their dependency from Applicants' amended independent Claim 1. Please note Applicants' Claims 2-9 and 13-15 have each been amended to specify that Claims 2-9 and 13-15 are directed to an "ablative rocket nozzle" to correspond with the preamble of Applicants' amended independent Claim 1.

As noted above, Applicants' Claims 10-12 have been cancelled without prejudice or disclaimer of the subject matter contained therein.

C. Applicants' Amended Independent Claim 16

Applicants' independent Claim 16 has been amended to recite features similar to those introduced into Applicants' independent Claim 1 by way of the above-described amendment. In particular, Applicants' independent Claim 16 has been amended to recite the additional features of: (i) a first plurality of openings in the first ablative composite sub-assembly, (ii) a second plurality of openings in the second ablative composite sub-assembly and generally aligning with the first plurality of openings, and (iii) third plurality of openings through the film adhesive that generally aligns with the first plurality of openings in the first ablative composite sub-assembly and with the second plurality of openings in the second ablative composite sub-assembly.

As noted above, the cited references, including the Emerson, Beggs, Stockel, and Woessner references, do not teach or suggest an ablative rocket nozzle including a film adhesive having such a plurality of openings therethrough. It is therefore respectfully submitted that amended independent Claim 16 is patentably distinguishable over the references of record, and allowance of Claim 16 is respectfully requested.

D. Applicants' Dependent Claims 17-22

Applicants' Claims 17-19 and 21 are each believed allowable at least in view of their dependency from Applicants' amended independent Claim 16. Please note Applicants' Claims 17-19 and 21 have each been amended to recite that Claims 17-19 and 21 are directed to an "ablative rocket nozzle" and to correspond with the preamble of Applicants' amended independent Claim 16.

As noted above, Applicants' Claims 20 and 22 have been cancelled without prejudice or disclaimer of the subject matter contained therein.

VI. Applicants' Newly-Added Claims 29-31

Applicants newly-added Claims 29-31 each dependent from Applicants' amended independent Claim 1 and are consequently believed allowable therewith. This notwithstanding, Applicants note that each of Applicants' Claims 29-31 recite features

not shown or suggested by the references of record. For example, Applicants' Claim 29 depends directly from Claim 1 and recites that the ablative rocket nozzle further includes a guide pin that extends from one of the first plurality of axial openings provided in the first ablative sub-assembly, through one of the third plurality of axial openings provided through the film adhesive, and into one of the second plurality of openings provided in the second ablative sub-assembly to align the first ablative composite sub-assembly with the second ablative composite sub-assembly. Applicants' Claim 30 depends from Applicants' Claim 29 and adds that the guide pin contacts the first ablative sub-assembly proximate a first axial in the first plurality of axial opening. Finally, Applicants' Claim 31 depends from Applicants' Claim 30 and further specifies that an outer diameter of the guide pin is substantially equivalent of the inner diameter of the first axial opening. An example of two such guide pins is shown in Applicants' FIGs. 4 and 5 and described in the attendant description (note guide pins 38 extending through the axial openings in sub-assembly 10 in FIG. 4 and guide pins 38 extending through sub-assembly 10, film adhesive 32, and sub-assembly 22 disposed within housing 36 in FIG. 5).

With respect to the primary reference, the Emerson reference, Applicants note positioner post 42 shown in Emerson FIG. 16 does not extend between one of a plurality of axial openings provided through a first ablative subassembly, a second ablative subassembly, and a film adhesive as recited in Applicants' newly-added Claim 29; positioner post 42 does not contact a subassembly of the ablative rocket nozzle proximate an axial openings (note that positioner post 42 instead contacts scaffolding 43, which, in turn, contacts the interior of nozzle shell 10) as recited in Applicants' newly-added Claim 30; and positioner post 42 does not have an outer diameter that is substantially equivalent to the inner diameter of one of a plurality of axial openings provided through a first ablative subassembly as recited in Applicants' newly-added Claim 31.

VII. Conclusion

Considering the foregoing remarks and amendments, Applicants respectfully submit that the Application is now in condition for allowance.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

If, for some reason, Applicants have not paid a sufficient fee for this response, please consider this as authorization to charge INGRASSIA, FISHER & LORENZ, PC, Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,
INGRASSIA, FISHER & LORENZ

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